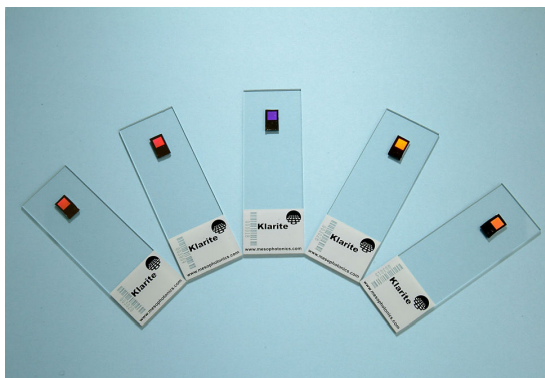
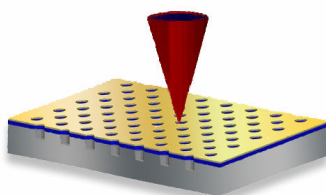


Klarite[®] Substrates for Surface Enhanced Raman Spectroscopy

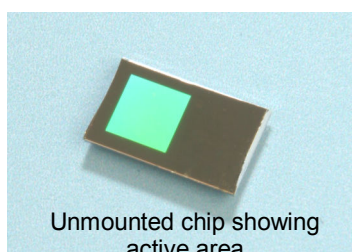


Mesophotonics Klarite[®] substrates provide a unique solution for Surface Enhanced Raman Spectroscopy (SERS). As well as generating unrivalled levels of Raman signal reproducibility, the very high signal levels achieved when using these substrates make taking Raman spectra as easy as obtaining fluorescence spectra, with significantly lower detection limits for many molecules.

Reproducibility is designed into Klarite[®] substrates by using volume manufacturing procedures from the semiconductor industry. Tests have shown relative standard deviations of <10% are achieved with only 5mW excitation at 633nm or 785nm. This includes all variations between different chips without any data selection or filtering.



Klarite[®] substrates feature a systematically designed nanometre scale patterning of the Gold coated silicon surface. Comprising regular arrays of holes, the surface patterns form photonic crystals which control the surface plasmons that govern the SERS amplification. By leveraging its experience in photonic crystal design, Mesophotonics is able to control the surface plasmon effects and thus control the enhancement of the Raman signal.



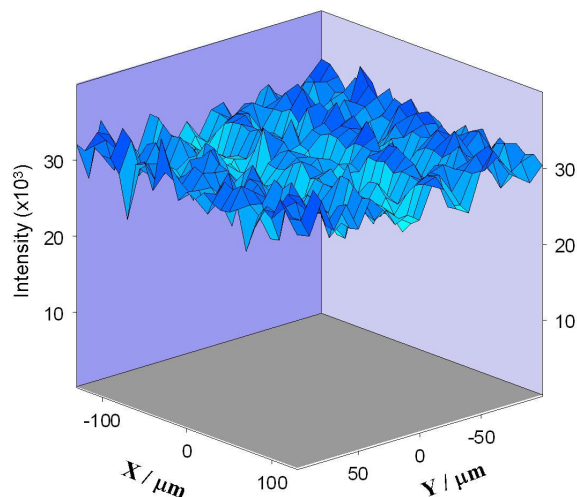
• Key Features

- Exceptional signal reproducibility
- High Raman signal enhancement
- Compatible with standard Raman spectrometers

• Applications

- Analytical chemistry
- Pharmaceutical Drug development
- Forensics
- Medical diagnosis
- Trace analysis
- Homeland security
- Chemical and biological detection

Reproducible SERS signal over 200 μ m x 260 μ m area



Spectra taken with Renishaw's inVia Reflex Raman microscope, 10mW 785nm excitation confocal configuration, 1sec exposure time. Intensity of 1072cm⁻¹ Benzenethiol Raman peak is shown.



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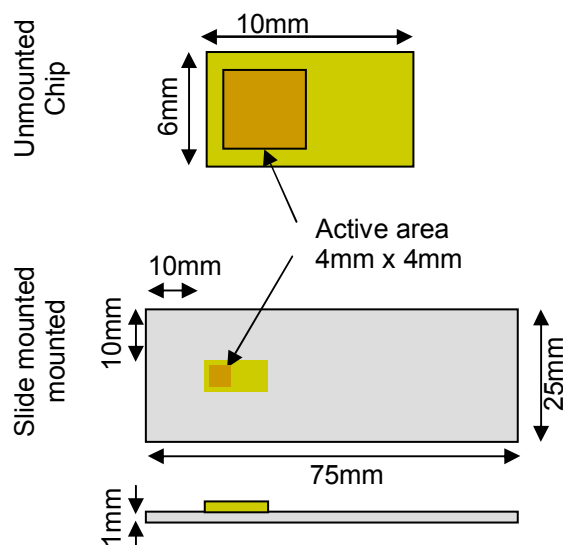
Klarite[®] Substrates for Surface Enhanced Raman Spectroscopy



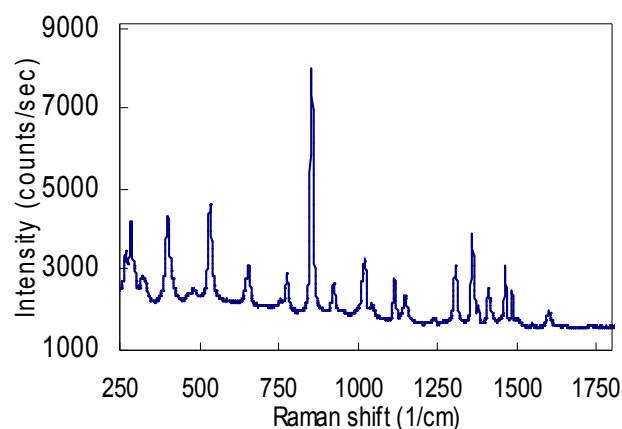
Device Parameters

Klarite [®] SERS *	Slide Mounted	Unmounted chips
Active area	4 mm x 4 mm	
Active surface	Gold coated textured silicon	
Typical operating parameters		
Raman excitation wavelength (for others please enquire)	633 nm, 785 nm	
Excitation power (typical for 10s signal acquisition)	5 mW	
Enhancement factor, relative to a non-enhancing surface	>1,000,000	
Size	75mm x 25mm x 2mm	6mm x 10mm x 0.5mm
Product code	302	303

Chip & Slide dimensions



Typical Spectrum of 0.5 mM L-Alanine



Spectrum taken with Horiba Jobin Yvon's LabRAM ARAMIS Raman system, 15mW 785nm excitation, 10sec exposure.

Ordering Information:

Klarite[®] substrates are supplied in a minimum quantity of 5 pieces, either premounted on a standard glass microscope slide or as unmounted chips.

Orders may be placed by credit card or company purchase order.



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* patent applied for.
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